

# **Exhibit 2**

June, 2006

## **CURRICULUM VITAE**

- 1. Name** Allan I. Levey, M.D., Ph.D.
- 2. Current Titles and Affiliations**
  - a. Academic appointments**
    - 1. Primary** Professor of Neurology, 1996-present
    - 2. Joint & Secondary** Professor of Psychiatry & Behavioral Sciences, 1996-present  
Professor of Pharmacology, 1997-present  
Faculty member, Graduate Program in Neuroscience,  
Emory University, 1991-present  
Faculty member, Graduate Program in Molecular and  
Systems Pharmacology, Emory University, 1997-2002
  - b. Clinic appointments** Section Head of Neurology, The Emory Clinic, 2003-present  
Director, Cognitive and Behavioral Neurology Program, Neurology Section  
Emory Clinic, 1995-2003
  - c. Administrative appointments** Chairman, Dept. of Neurology, 2003-present  
Director, Emory Center for Neurodegenerative Disease and  
Alzheimer's Disease Center, 2001-present  
Director, M.D./Ph.D. Training Program, Emory University, 1997-present
- 3. Birthdate & Place** 12/23/55, Madison, Wisconsin
- 4. Citizenship** USA
- 5. Office Address** Emory University School of Medicine  
Center for Neurodegenerative Disease  
Whitehead Biomedical Research Building, 505  
615 Michael St.  
Atlanta, GA 30322  
  
Tel: (404) 727-5006  
FAX: (404) 727-3999
- 6. Email Address** alevey@emory.edu
- 7. Licensures** State of Georgia Medical License No. 034885, Exp. 12/31/07
- 8. Education**
  - High School** Madison West High School, Madison, WI, 1974
  - College** University of Michigan, Ann Arbor, MI, B.S. with Honors, 1978
  - Graduate School** University of Chicago, Chicago, IL, Ph.D., Immunology, 1982
  - Medical School** University of Chicago, Chicago, IL, M.D. with Honors, 1984

Levey, Allan I.

**9. Postgraduate Training**

**Clinical**

Intern, Dept. of Medicine, Michael Reese Hospital, Chicago, IL, 1984-85  
Resident, Department of Neurology, The Johns Hopkins Hospital,  
Baltimore, MD, 1986-89  
Chief Resident, Department of Neurology, The Johns Hopkins Hospital,  
Baltimore, MD, 1988-89  
Cognitive Neurology, The Johns Hopkins Hospital,  
Baltimore, MD, 1989-91

**Research**

Fellow, Department of Pharmacological and Physiological Sciences,  
University of Chicago, 1985-86  
Special Volunteer, Laboratory of Molecular Biology, NINDS, National  
Institutes of Health, Bethesda, MD 1989-90

**10. Specialty Boards**

Diplomate, American Board of Psychiatry and Neurology, 1990

**11. Previous Academic Appointments**

Assistant Professor, Departments of Neurology and Pathology, The Johns  
Hopkins University School of Medicine, Baltimore, MD, 1989-91  
Associate Professor, Departments of Neurology (primary) and Psychiatry  
& Behavioral Sciences (secondary), Emory University School of  
Medicine, 1991-1996.

**12. Previous Administrative Appointments**

Director of Graduate Studies, Neuroscience Graduate Training Program,  
1995-1997

**13. Committee Memberships**

**a. National and International**

*Federal*

Board of Scientific Counselors, National Institute of Mental Health,  
March, 2005, Ad Hoc  
Agency for Toxic Substances and Disease Registry, Advisory Panel for  
Alzheimer's and Parkinson's Disease. 2002  
Neurological Sciences 2 NIH IRG, Ad Hoc Reviewer,  
1995-98  
Special Review Committee, NIAAA, 8/27/96  
Neurological Sciences 3 NIH IRG (Molecular Neuropath),  
10/95, Ad Hoc Reviewer  
Bio-Psychology NIH IRG, 1/94, Ad Hoc Reviewer

*American Neurological Association*

Long Range Planning Committee, 2002-2004

*American Academy of Neurology*

Chairman, Research Committee, Geriatrics and Dementia Section,  
1998-2000  
Geriatrics Award Committee, 2001-2007

*Society for Neuroscience*

Neurobiology of Disease Workshop Committee, 1992-1998

Levey, Allan I.

Public Information Committee, 2001-2004

Society for Experimental Neuropathology  
Program Committee, 1996-2000

Coins for Alzheimer's Research Trust (CART), Inc.  
Peer-Review Committee, 2006-present

**b. Regional and State**

Alzheimer's Association, Georgia Chapter  
Board of Directors (Governors), 1998-present  
Fundraising Committee, 1996  
Program and Services Committee, 1999-present

Southeast Center of Excellence in Geriatric Medicine  
Steering Committee, 1998-2001

**c. Institutional**

Department of Neurology, Emory University  
Executive Committee, 1994-present  
Chairman, Research Strategic Planning Committee, 1997  
Chairman, Appointments and Promotions Committee, 1992-1997  
Student Education Committee, 1994-1997  
Residency Committee, 1992-1995  
Director, Residency Basic Science Education, 1992-1994  
Coordinator, Strategic Planning Committee, 1994

Emory University  
University Strategic Plan, 2005  
Discussion leader for Mind, Brain, and Neuroscience theme  
Presidential Advisory Committee, Emory University 2004-present  
Development and University Relations Faculty Advisory Council, 2005-  
Joint Steering Committee, Emory-deCODE genetics Alliance, 2002-present  
Technology Transfer Research Advisory Committee, 1996-1999

Woodruff Health Sciences Center  
WHSC Strategic Planning Committee for 2012 Vision, 2005  
Chair, Workgroup on Program Definitions  
Clinical Integration Committee, 2003-present  
Search Committee, Yerkes Director, 2000  
Health Science Center Strategic Research Planning  
Basic Science Research Subcommittee, 1997

Emory University School of Medicine  
Search Committee (Chair), Rehabilitation Medicine Chair, 2005-2006  
Search Committee, Biochemistry Chair, 2003-2004  
School of Medicine Research Advisory Committee  
Subcommittee on Core Laboratories, 2000-2002  
School of Medicine Research Retreat, Chair of Work group for  
Neurological and Behavioral Science, 2000  
LCME Accreditation Task Force, 1998-2000  
LCME, Graduate Education in the Basic Medical Sciences  
Subcommittee (Chair), 1998-2000  
School of Medicine Education Planning  
Curriculum Subcommittee, 1998-1999

Levey, Allan I.

Faculty Relations Committee, ad hoc, 1998  
Committee on Appointments and Promotions, 1992-1996  
Medical Research Council  
    Subcommittee on Transgenic Facilities, Feb. 1994  
    Subcommittee on Core Facilities, 1994-95  
Undergraduate Medical Education Subcommittee, 1992

*Emory Healthcare*

Emory Healthcare Board of Trustees, 2004-present  
Emory University Hospital Medical Advisory Committee, 2003-present  
Professional Services Committee, Emory University Hospital, 2003-present  
Professional Interdisciplinary Staff Strategic Committee, Wesley Woods  
    Geriatric Center, 1998-2002

*Emory University Graduate School of Arts & Sciences*

Executive Committee, Division of Biological & Biomedical Sciences,  
    1997-present  
Executive Council, Neuroscience Graduate Program, 1993-2000  
Executive Committee, Molecular Therapeutics & Toxicology Training  
    Grant, 1995-present  
Clinical Research Curriculum Award/Masters of Science in Clinical  
    Research, Advisory Committee, 1999-present

**14. Consultantships**

*Advisory Board*

Research Biochemicals Incorporated (RBI), Natick, MA  
    Scientific Advisory Board Member, 1995-2000  
Tourette's Syndrome Association, Inc (TSA), Bayside, NY  
    Scientific Advisory Board Member, 1995-present  
Harvard Brain Tissue Resource Center, Belmont, MA  
    External Scientific Advisory Board Member, 1996-present  
Alzheimer's Association, Georgia Chapter  
    Board of Directors (Governors), 1998-present  
ACADIA Pharmaceuticals, San Diego, CA  
    Clinical Advisory Board, 2000-present  
American Federation of Aging Research  
    National Scientific Advisory Council, 2003-present  
NovaDel  
    Scientific Advisory Board, 2004-present

*Consultant*

deCODE genetics, Reykjavik, Iceland 2000-present  
Eli Lilly and Company, Indianapolis, IN 1991-96  
Merck Research Laboratories, Philadelphia, PA 1993-1995  
Astra Charnwood, Leics, England 1997-1998  
Allergan, Irvine, CA 2000-2002  
University of Pittsburgh Western Psychiatric Institute,  
    External Review Panel member, November 27-29, 2000.  
Abeome, Athens, GA 2002-present  
Prudential Securities, Boston, MA 2003-present  
University of Chicago Pritzker School of Medicine Department of  
    Neurology, External Reviewer, July 13-15, 2004

Levey, Allan I.

University of Puerto Rico and the CITREN Foundation, to advise on establishment of a Center for Neurodegenerative Disease, August 17-19, 2005

University of Pennsylvania School of Medicine, Department of Neurology, External Reviewer, May 8-9, 2006.

## 15. Editorial/Manuscript Reviews

### Editorial Board

Experimental Neurology, 2002-present

Neuropsychopharmacology, 2003-present

Annals of Neurology, 1999-2004

### Reviewer

Am J Hum Genetics	Annals Neurology	Anat Embryol
Brain Research	Epilepsy Res	Eur J Neurosci
Exper Neurol	Glia	J Chem Neuroanat
J Comp Neurol	J Neurochemistry	J Neurol Sci
J Neurosci	JNNP	Mol Pharmacol
Neurobiol Aging	Neurology	Neuroscience
Neuro Lett	Proc Nat Acad Sci	Synapse

## 16. Honors and Awards

Francis Drew Winkley Award, 1974  
 Mortar Board, University of Michigan, 1977  
 James B. Angell Scholar, University of Michigan, 1978  
 Magna Cum Laude, University of Michigan, 1978  
 Phi Beta Kappa, University of Michigan, 1978  
 Francis L. Lederer Foundation MD/PhD Fellowship,  
 University of Chicago, 1980-84  
 Steven A. Lukes, M.D. Prize, University of Chicago, 1984  
 Alpha Omega Alpha, University of Chicago, 1984  
 National Research Service Postdoctoral Fellowship,  
 University of Chicago, 1985-86  
 Clinical Investigator Development Award, NINDS, NIH 8/89-7/92  
 Faculty Scholar Award, Alzheimer's Association, 7/90-6/93 and 7/95-6/98  
 Woodruff Molecular Neuroscience Investigator Award,  
 Emory University, 1991-94  
 Derek Denny-Brown Neurological Scholar Award,  
 American Neurological Association, 1993  
 Heikkila Research Scholar Award, National Parkinson Foundation, 1995  
 ISI Highly Cited Researcher, Neuroscience, 2001  
 Community Health Charities of Georgia's Health  
 Advancement Research Award, 2002  
 Team Hope Award for Medical Leadership,  
 Huntington's Disease Society of America, 2005  
 Best Doctors in America, 2005

## 17. Society Memberships

Society for Neuroscience, 1983  
 American Association for the Advancement of Science, 1983  
 American Academy of Neurology, 1987  
 American Neurological Association, 1993  
 Behavioral Neurology Society, 1995  
 American Society for Biochemistry and Molecular Biology, 2002

Levey, Allan I.

**18. Organization of National/International Conferences**

Organizer and Chair, Neurobiology of Disease Workshop on  
Schizophrenia, Society for Neuroscience, San Diego, Nov. 11, 1995  
Organizer and Chair, Subtype Specific Cholinergic Therapies: Effects on  
Cognitive and Noncognitive Symptoms in Alzheimer's Disease.  
World Congress Biological Psychiatry, Nice, France. June 24, 1997.  
Chair, Society for Neuroscience Platform Session: Alzheimer's Disease  
Pathogenesis. New Orleans, LA. November 12, 2003.

**19. Research Focus**

Dementia and Movement Disorders  
Molecular Neurobiology and Genetics of Alzheimer's and  
Parkinson's Diseases  
Molecular Neuropharmacology

**20. Grant Support**

**a. Active**

**1. Federal**

P50 AG025688 6/1/05-5/30/10  
Emory Alzheimer's Disease Research Center  
Principal Investigator: Levey  
Annual Direct Costs Awarded: \$946,793

5R01 NS30454, 09/30/1991 - 03/31/2010  
Muscarinic Receptor Proteins in Alzheimer's Disease  
Principal Investigator: Levey  
Annual Direct Costs Awarded: \$231,250

2T32 GM08169-11, 7/1/97-6/30/06  
Medical Scientist Training Program  
Principal Investigator: Levey  
Annual Direct Costs Awarded: \$734,027

1 U54 ES012068 08/26/2002-07/30/2007  
Collaborative Center For Parkinson's Disease Environmental Research  
Principal Investigator: DeLong  
Project 3 Principal Investigator: Levey  
Annual Direct Costs Awarded: \$860,000

Alzheimer's Cooperative Study Unit U01 AG10483 1995-present  
Clinical Trials in Alzheimer's Disease  
Participation in several studies (estrogen, agitation, melatonin, MCI)  
Principal Investigator: Leon Thal, UCSD (A. I. Levey, PI of Emory site)

1R01 AG24214-01, 8/15/2004-6/30/2008  
ApoE Receptor LR11 In Alzheimer's Etiopathogenesis  
Principal Investigator: Lah  
Annual Direct Costs: \$202,500

1R01 MH073159, 06/1/2004 - 05/31/2009  
Molecular Analysis of Presynaptic Choline Transporters

Levey, Allan I.

Principal Investigator: Blakely (Vanderbilt)  
Annual Direct Costs Awarded (Emory subcontract): \$25,000

**2. Private Foundation**

Doris Duke Foundation 8/02-7/04 (no cost extension through 7/05)  
Role of the STRK1 Gene in Ischemic Stroke in the USA  
Principal Investigator: Levey  
Direct Costs Awarded: \$200,000

**b. Previous support**

Clinical Investigator Award, K08 NS01387, 8/1/89-10/31/92  
Localization of Muscarinic Receptor Proteins m1-m5  
Principal Investigator: A. I. Levey  
Direct Costs Awarded: \$189,400

Alzheimer's Association, FSA-90-006, 7/90 - 6/93  
Molecular Anatomy of Muscarinic Receptor Subtypes m1-m5 in Rat Brain  
Principal Investigator: A. I. Levey  
Direct Costs Awarded: \$134,800

Emory Alzheimer's Disease Center Pilot Project, 1993-94  
Molecular Pharmacology & Anatomy of Hippocampus and Basal Forebrain  
Principal Investigator: A. I. Levey  
Direct Costs Awarded: \$20,000

RO1 07391, 7/1/94-6/30/99  
Molecular Analysis of the Serotonin Transporter  
Principal Investigator: R.D. Blakely (A. I. Levey, Co-PI 5% effort)  
Direct Costs Awarded: \$1,088,091

American Parkinson's Disease Association 8/94-7/95  
Synaptic Organization of Dopamine Receptors in a Model of  
Parkinson's Disease  
Principal Investigator: A.I. Levey, 0% effort  
Direct Costs Awarded: \$25,000

RO1NS28406, 4/1/95-3/31/98  
Cellular Mechanisms of Kindling-Induced Epileptogenesis  
Principal Investigator: P.J. Conn (A. I. Levey, Co-PI 5% effort)  
Direct Costs Awarded: \$562,190

Stanley Foundation, 7/93-6/95  
Molecular Subtypes of Dopamine Receptors in Human  
Brain and Schizophrenia  
Principal Investigator: A. I. Levey, 0% effort  
Direct Costs Awarded: \$60,000

RO1 NS30454, 10/91-9/95  
Muscarinic Receptor Proteins in Alzheimer's Disease  
Principal Investigator: A. I. Levey, 40% effort  
Direct Costs Awarded: \$521,607

Lilly Research Contract, 12/92-3/96  
Clinical Trial of LY246708 in Alzheimer's Disease



Levey, Allan I.

Principal Investigator: A. I. Levey  
Direct Costs Awarded: \$153,244

SmithKline Beecham 6/96-present  
Clinical Trial Of SB202026 in Patients With Alzheimer's Disease  
Principal Investigator: A. I. Levey  
Total Costs Awarded: \$101,250

Quintiles Pacific, Inc, 1/97-present  
Clinical Trial Of Xanomeline in Patients With Alzheimer's Disease  
Principal Investigator: A. I. Levey  
Total Costs Awarded: \$200,000 Lilly Research Contract, 12/94-12/95

Efficacy of m5 Muscarinic and AMPA Receptor Compounds in  
Parkinsonian Monkeys  
Principal Investigator: A. I. Levey  
Direct Costs Awarded: \$68,000

National Parkinson's Foundation 6/95-7/96  
Dopamine Transporter in Parkinson's Disease  
Principal Investigator: A. I. Levey, 0% effort  
Direct Costs Awarded: \$40,000

Emory/Georgia Tech Research Alliance Seed Grant, 7/96-6/97  
Calpain in Neurodegenerative Disease  
Principal Investigator: A.I. Levey and L. Williams (GA Tech)  
Direct Costs Awarded: \$15,000 (Emory)

Emory/Georgia Tech Research Alliance Seed Grant, 7/97-6/98  
Calpain in Neurodegenerative Disease  
Principal Investigator: J. Glass; (A. I. Levey, Co-PI 0% effort)  
Direct Costs Awarded: \$20,000 (Emory)

Alzheimer's Association 7/95-6/98  
Vesicular Acetylcholine Transporter Expression in Alzheimer's Disease  
Principal Investigator: A. I. Levey, 0% effort  
Direct Costs Awarded: \$147,911

ROI DA09492, 7/01/95-5/31/98  
The Neurochemical Pathology of Human Cocaine Abuse  
Principal Investigator: C.B. Nemeroff; (A. I. Levey, Co-PI 5% effort)  
Direct Costs Awarded: \$646,422

ROI DA9484, 9/30/94-8/31/98  
Molecular Signature of Dopamine Synapse in Cocaine Fatalities  
Principal Investigator: D. Mash (A. I. Levey, Co-PI 10% effort)  
Direct Costs Awarded: \$887,360

P01 NS31937 4/94-3/99  
Basal Ganglia: Functional Circuitry (M.R. DeLong, P.I.)  
Project I. Primate Basal Ganglia: Molecular Pharmacology and Anatomy  
Principal Investigator (Project I): A. I. Levey 20% effort  
Direct Costs Awarded: \$695,609 (\$3,040,136 total program project)

Levey, Allan I.

Faculty Research Commercialization Program, 7/98-6/99  
An *In Vitro* Test for Diagnosis of Alzheimer's Disease and  
For Drug Discovery  
Advanced Technology Development Center, Georgia Tech  
Principal Investigator: A. I. Levey, 0% effort  
Direct Costs Awarded: \$50,000

RO1 NS34876, 2/1/96-11/30/00  
Neuromodulatory Roles of Muscarinic Receptor Subtypes  
Principal Investigator: P.J. Conn; (A. I. Levey, Co-PI 10% effort)  
Direct Costs Awarded: \$629,931

RO1 NS/OD36755, 09/30/97-05/31/01  
Regulation of NMDA Receptors by Muscarinic ACh Receptors  
Principal Investigator: P.J. Conn; (A. I. Levey, Co-PI 5% effort)  
Direct Costs Awarded: \$546,630

P50 MH58922, 9/30/99-8/31/01  
Conte Center for Neuroscience of Mental Disorders  
Principal Investigator: C.B. Nemeroff (A.I. Levey, 5% effort)  
Direct Costs Awarded: \$1,761,769

Alzheimer's Association 7/98-6/01  
An *In Vitro* Diagnostic Test for Alzheimer's Disease  
Principal Investigator: J.T. Greenamyre (A. I. Levey, Co-PI, 0% effort)  
Direct Costs Awarded: \$180,000

Rotary International, District 7770 CART Fund. 4/24/99-5/00  
In Vitro Assay for Definite Alzheimer's Disease  
Principal Investigator: A. I. Levey  
Direct Costs Awarded: \$100,000

3RO1 NS30454 4/23/99  
NINDS Supplement for Research for a confocal microscope  
Principal Investigator: A. I. Levey, 0% effort  
Direct Costs Awarded: \$200,000

Woodruff Board, Emory University School of Medicine 8/13/99-2000  
Development of a Multiphoton Confocal Microscope  
Principal Investigator: A. I. Levey  
Direct Costs Awarded: \$300,000

Allergan Sales, Inc. 12/1/99-1/01  
Muscarinic Localization in Ocular Tissues  
Contract: \$20,800

USAMRMC 98293014, 9/23/98-9/23/02  
Metabotropic Glutamate Receptor mGluR4 as a Novel Target for  
Parkinson's Disease Treatment  
Principal Investigator: Levey  
Direct Costs Awarded: \$522,499

Levey, Allan L.

ROI NS37031 9/30/98-8/31/02  
Monoamine Transporters in Parkinsonism  
Principal Investigator: Levey  
Direct Costs Awarded: \$185,912

5 P30 AG10130 9/30/91-6/30/03  
Emory Alzheimer's Disease Center  
Principal Investigator: Levey  
Annual Direct Costs Awarded: no cost extension

Alzheimer's Association 8/00-7/03  
Muscarinic Receptor Defects in Transgenic Mice with FAD Mutations  
Principal Investigator: Levey  
Direct Costs Awarded: \$180,000

NSF Science & Technology Centers (STC): 11/01/99-10/31/2004  
Center for Behavioral Neuroscience  
Principal Investigator: Insel  
Core III: Cellular Neuroscience Core (Levey, PI Core III)  
Costs Awarded: \$19,902,614

5P05 NS38399 12/01/98-11/30/2003  
Udall Parkinson's Disease Center  
Principal Investigator: DeLong  
Project 5: mGluR in the Basal Ganglia (Conn PI; Levey Co-PI)  
Annual Direct Costs: \$989,737

## 21. Clinical Service Contributions

Responsible for the Emory Neurology clinical activities. The Department faculty members care for ~ 30,000 patients annually at Emory Clinic and Emory University Hospital, Wesley Woods, Grady Memorial Hospital, and the Atlanta VA. In addition to serving as Chair of the Department of Neurology, Dr. Levey serves as Section Head of Neurology for the Emory Clinic and Chief of Service for Neurology at Emory University Hospital. Dr. Levey's direct clinical activities include outpatient and inpatient specialty work in Cognitive Neurology.

## 22. Formal Teaching

### a. Medical Students

Co-Director, Pathophysiology Sophomore Medical Student Course, Neurology Section, MEDI 650, 1993-1997  
Lecturer, Medical Neurobiology, MEDI-530, 1993

### b. Graduate Programs

#### Neuroscience Training Program

Course Director, Graduate Seminars, Neuroscience Program, NS790R, 1994  
Course Director, Basic Mechanisms of Neurological Disease, IBS506/MEDI645, 1994-1997  
Lecturer, Molecular Neurobiology, IBS-750, 1992-present

Levey, Allan I.

Lecturer, Neuroscience II, IBS-503, 1995  
 Lecturer, Principles of Molecular Therapeutics & Toxicology,  
 IBS531, 1997-present  
 Lecturer, Neuroanatomy Core Course, Neuroanatomy of Learning and  
 Memory, 1998-present

**Rollins School of Public Health**

Lecturer, Aging and Health Care Issues, HPM 563, 2000-present

**Residency Program**

Course Director, Advances in Basic and Clinical Neurosciences  
 Dept. of Neurology Seminar Series, 1992-94  
 Course Director, Introduction to Clinical Neurology  
 Dept. of Neurology Resident Summer Teaching Series, 1992-1995

**c. Undergraduate**

**Emory College**

NBB424, Neuropathology for Neuroscience and Behavioral Biology  
 Alzheimer's Disease, 2000-present

**23. Supervisory Teaching**

**a. Predoctoral Students**

**Ph.D. Thesis Advisor**

Emory University Neuroscience Training Program/Grant (current position)  
 Heather Prince, 1992-1997/PhRMA Advanced Predoctoral Fellowship  
 (postdoctoral fellow, Duke Univ.)  
 Susan Taylor, 1994-1997 /F31 MH11186  
 (Lecturer, Biology Dept., Emory University)  
 Michelle Gilmore, 1994-1998/F31 MH11474  
 (Assoc. Professor, Psychiatry, Indiana University)  
 Ernesto Ince, 1993-1998/F31 MH11307  
 (Emory Univ.)  
 Scott Counts, 1995-2000 F31 MH11987 (4/8/98) (Postdoc, Rush Univ.)  
 Oren Levy, M.D./Ph.D. Training Program 1996-2001 F31 MH12256  
 (Cornell, Neurology residency)  
 Jennifer Berkeley, M.D./Ph.D. Training Program 1997-2002/PhRMA  
 Advanced Predoctoral Fellowship (Johns Hopkins, Neurology  
 residency)  
 Laura Volpicelli, 1998-2003/PhRMA Advanced Predoctoral Fellowship  
 (Postdoctoral fellow, Emory University)  
 Dan McClatchy, 2000-2004 F31 NS043094 (UCSD, Postdoctoral fellow)  
 Leah Anderson, 2001-present  
 Katrin Offe, 2001-present  
 Kristen Sager, 2003-present  
 Sara Dodson, 2003-present  
 Albert Gus Davis, M.D./Ph.D. Training Program, 2004-present  
 Yair Gozal, M.D./Ph.D. Training Program, 2004-present

**Ph.D. Thesis Committee Member**

Dissertation Committees, Emory University Graduate School

Levey, Allan I.

Haley Melikian, Neuroscience Training Program 1993-1995  
 Kyle Miller, Neuroscience Training Program 1994-1995  
 Yan Qian, Neuroscience Training Program 1994-1996  
 Bill Paxton, Pharmacology/Physiology Training Program 1995-1996  
 Chris Bradley, Neuroscience Training Program 1994-1997  
 Dorothy Chung, Neuroscience Training Program 1994-1997  
 Heather Kimmel, Neuroscience Training Program 1995-1997  
 Steve Stout, Neuroscience Training Program 1995-1999  
 Deepa Joshi, Neuroscience Training Program 1995-1999  
 Melissa Butler, Neuroscience Training Program 1995-1999  
 Tracy Thomas, Neuroscience Training Program 1995-2000  
 Andrew Ray, Neuroscience, 1995-2001  
 Denise Flaherty, Cell Biology Training Program, 1996-1999  
 Charlotte Ladd, Neuroscience Training Program, 1997-2001  
 Audra Brown, Molecular Therapeutics & Toxicology, 1996-2001  
 David Wolf, Neuroscience Training Program, 1997-2001  
 Stephanie Dall Vechia, Molecular Therapeutics & Toxicology, 1998-2001  
 Rick Peavy, Molecular Therapeutics & Toxicology, 1998-2002  
 Dan Zhu, Genetics and Molecular Biology, 1998-2003  
 Hazar Awad, Molecular Therapeutics & Toxicology, 1999-2001  
 Candice Junge, Molecular and Systems Pharmacology, 2001-2003  
 Wendy Hasenkamp, Neuroscience, 2001-2005  
 Maryse Paquet, Neuroscience, 2002-2006  
 Masaaki Kuwajima, Neuroscience, 2003-present  
 Brandi Whatley, Neuroscience, 2004-present  
 James Olzmann, Neuroscience, 2004-present

*Dissertation Committees, Extramural Member*

Mike Coco, Pharmacology, Duke University Medical Center  
 Julie Bennett, Pharmacology, University of North Carolina at Chapel Hill

**b. Postdoctoral Supervisor**

Brian Ciliax, Ph.D. 1991-1993 (Asst. Professor, Emory Univ.)  
 Masakazu Wakai, M.D., 1994-1996 Markey Fellowship  
 (Neurologist, Japan)  
 Angela Ashley, M.D., 1995-1996 (clinical fellow)  
 Kyle Miller, Ph.D., 1995-1997 (postdoctoral fellow, Duke Univ.)  
 Gary Miller, Ph.D., 1995-1997 F32 NS09930 (3/15/96)  
 (Asst. Professor, Univ. of Texas)  
 Mohammed Siddique, M.D., 1996-1997 (Neurologist, private practice)  
 Madhav Thambisetty, M.D., Ph.D., 2002-2004 (University of London)

*Sponsor of Clinical Investigator Development Awards (NINDS)*

Steven M. Hersch, M.D., Ph.D., 1992-1997 (Assoc. Professor, Harvard)  
 Mario Salterelli, M.D., Ph.D., 1993-1998 (Pfizer)  
 Jim Lah, M.D., Ph.D., 1996-2001 (Asst. Professor, Emory)

**c. Residency Program**

Supervision of housestaff in clinic and hospital wards (Emory Clinic,  
 Emory University Hospital, Wesley Woods Hospital, Grady  
 Hospital), 1991-present

**24. Lectureships, Seminar Invitations, and Visiting Professorships (selected)**

Levey, Allan I.

- American Society for Neurochemistry, Phoenix, AZ, March, 1990. Symposium on Muscarinic Receptors. Localization of Muscarinic Receptor mRNA and Protein.
- American Neurological Association, Atlanta, GA, October, 1990. Plenary Session. Expression of Muscarinic Receptor Subtype mRNA and Protein in Rat and Human Brain: Implications for Selective Cholinergic Treatment of Neurological Disease.
- American Academy of Neurology, Boston, MA, April, 1991. Neurochemistry Course: Muscarinic Acetylcholine Receptor Subtypes.
- American Neurological Association, Seattle, WA, October, 1991. Symposium: Receptors and Disease. The Muscarinic Receptor and Dementia.
- Fifth International Symposium on Subtypes of Muscarinic Receptors, Newport Beach, CA, October 1992. Muscarinic Receptor Subtype Specific Antibodies.
- Frontiers in Neuroscience, Atlanta Chapter of the Society for Neuroscience. Emory University, February, 1993. Immunological Techniques for Characterization of Neurotransmitter Receptors.
- University of Miami, Department of Molecular and Cellular Pharmacology. Muscarinic Receptor Subtypes in Brain. Feb. 10, 1993.
- Washington University Alzheimer's Disease Research Center, St. Louis, April 11-13, 1993. Expression of Acetylcholine and Glutamate Receptor Genes in Brain: Implications for Alzheimer's and Other Neurodegenerative Diseases.
- Parke-Davis Pharmaceutical Research, Ann Arbor, MI, April 26, 1993. Expression of Muscarinic Receptor Subtypes in Brain. Continuing Education Program: Cholinergic Pharmacology.
- Emory University School of Medicine Alzheimer's Disease Center Symposium, Atlanta, GA, May 21, 1993. Molecular Pharmacology: Implications for Neurodegenerative Disease.
- Yale University School of Medicine, Section on Neurobiology. Molecular Subtypes of Muscarinic Acetylcholine and Dopamine Receptors in the CNS. June 10, 1993.
- International Congress of Physiological Sciences, Glasgow, Scotland, August 5, 1993. Symposium: Muscarinic Mechanisms. Differential Expression of Muscarinic Receptor Subtypes in Brain and Peripheral Tissues.
- Oxford University, Oxford, England. MRC Anatomical Neuropharmacology Unit. August 9, 1993. Molecular Subtypes of Dopamine and Acetylcholine Receptors.
- American Neurological Association, Boston, October 18, 1993. Derek Denny-Brown Award Presentation, Plenary Session. Molecular pharmacology of dopaminergic and cholinergic systems in the basal ganglia.
- American College of Neuropsychopharmacology (ACNP), Honolulu, Hawaii. December 17, 1993. Symposium: Muscarinic Acetylcholine Receptors in Alzheimer's Disease. Localization of Muscarinic Receptors in Human Brain.
- XIXth Collegium Internationale NeuroPsychopharmacologicum (CINP) Congress, Washington, D.C., June 27, 1994. Muscarinic Receptor Subtype Expression in Brain.

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- IUPHAR, Quebec City, Canada. Symposium on Localization of Molecules involved in Dopamine Neurotransmission. Light and Electron Microscopic Localization of Dopamine Receptors and Transporter in Brain, July 21-23, 1994.
- Sixth International Symposium on Subtypes of Muscarinic Receptors, Ft. Lauderdale, Nov. 9, 1994. Localization of the Family of Muscarinic Receptors in Basal Ganglia.
- Society for Experimental Neuropathology, Presidential Symposium on Neurobiology of Disease. Alterations in Molecules involved in Neurotransmission in Alzheimer's Disease. Washington, D.C., Oct. 22, 1995.
- National Academy of Sciences Colloquium: Memory: Recording Experience in Cells and Circuits, Irvine, CA, Feb. 17-20, 1996.
- American Academy of Neurology, The Neurochemistry of Neurological Disease Course: Neurotransmission Deficits in Alzheimer's Disease., San Francisco, March 25, 1996.
- Harvard Medical School/Massachusetts General Hospital Neuroscience Center Seminar Series, Boston, MA, May 21, 1996. Molecules in Cholinergic Transmission and Unexpected Changes in Alzheimer's Disease.
- Seventh International Symposium on Subtypes of Muscarinic Receptors, Washington, D.C., Nov. 9, 1996. The m2 muscarinic receptors in cholinergic and noncholinergic forebrain circuits.
- Neurology and Neurosurgery Update 1996, Emory University School of Medicine, Dec. 7, 1996. Advances in Early Onset Alzheimer's Disease.
- World Congress of Biological Psychiatry, Nice, France. June 24, 1997. Subtype Specific Cholinergic Therapies: Effects on Cognitive and Noncognitive Symptoms in Alzheimer's Disease.
- University of Alabama Alzheimer's Disease Center, Birmingham, AL. April 14, 1998. Muscarinic Transmission and Presenilin Function in Alzheimer's Disease.
- University of Chicago Pritzker School of Medicine, Dept. of Neurology. April 24, 1998. A Molecular Reanalysis of Cholinergic Systems and Alzheimer's Disease.
- Dopamine 98, Satellite Symposium of the IUPHAR Congress in Munich. (Invitation) Neurodegeneration and Parkinson's Disease. Strasbourg, France, July 22-25, 1998.
- Eighth International Symposium on Subtypes of Muscarinic Receptors, Danver, MA. Muscarinic Receptor Subtypes in Alzheimer's Disease. Aug. 25, 1998.
- Alzheimer's Association, Medical Interventions and Caregiver Support. Symposium Co-organizer and Discussion Leader. Alzheimer's Disease Update for Caregivers and Professionals (2 presentations). Atlanta, GA. Nov. 13 and 14, 1998.
- University of Wisconsin, Center for Neuroscience. Madison, WI, Presenilins and The Neurobiology of Alzheimer's Disease. December 11, 1998.
- SouthEast Center of Excellence in Geriatric Medicine. Advances in Alzheimer's Disease. Birmingham, MI. May 13, 1999.
- Georgia Nurses Association. Alzheimer's: Today and Tomorrow. Atlanta, GA. May 27, 1999.

Levey, Allan I.

American Association of Physician Assistants. Diagnosis and Treatment of Alzheimer's Disease. Atlanta, Ga. May 29, 1999.

Grand Rounds, Dept. of Neurology, The Johns Hopkins Hospital. Baltimore, MD. Early Alzheimer's Disease. Baltimore, MD. June 3, 1999.

Grand Rounds, Dept. of Neurology, Cornell Medical School. Early Alzheimer's Disease. New York, NY. June 17, 1999.

Atlanta Healthcare Partners, Blue Cross and Blue Shield of Georgia. Alzheimer's Disease for the Primary Care Physician. Atlanta, GA. June 29, 1999.

Hospice of Houston County, Alzheimer's Program Keynote Speaker. Alzheimer's Disease: Overview and Update. Warner Robins, GA. November 16, 1999.

Howard University, Department of Pharmacology. The Muscarinic Receptor Family and Subtype-specific Roles in Cholinergic Systems and Alzheimer's Disease. Washington, D.C. Feb. 9, 2000.

Grand Rounds, Dept. of Neurology, University of California, San Francisco Medical School. The Neurobiology of Alzheimer's Disease. San Francisco, CA. March 8, 2000.

Novartis Preceptorship on Alzheimer's Disease. Organized full day course for Novartis staff. Atlanta, Ga. May 5, 2000.

Georgia Gerontological Society, The Emory Alzheimer's Disease Center: Early Diagnosis and Treatment of Alzheimer's Disease. Savannah, Georgia. September 25, 2000.

Alzheimer's Association Caregiver Symposium. Mild Cognitive Impairment. Atlanta, Georgia, November 10, 2000.

Hospice of Houston County, Alzheimer's Program Keynote Speaker. Progress in the Early Diagnosis and Treatment of Alzheimer's Disease: Warner Robins, GA. November 14, 2000.

Medical College of Georgia, Dept. of Pharmacology. Muscarinic Receptor Signalling and Trafficking. Augusta, Georgia. November 15, 2000.

Rotary Club of Griffin. Alzheimer's Disease Research Advances and the CART Fund. Griffin, GA. November 30, 2000.

Alzheimer's Preceptorship for Janssen Pharmaceuticals. Organizer and speaker 2 day course. Atlanta, GA. Jan 16-17, 2001.

Alzheimer's Preceptorship for Parke-Davis Pharmaceuticals. Organizer and speaker. Atlanta, GA. March 1, 2001.

St. Joseph's Hospital. Progress in Alzheimer's disease: New Approaches to Diagnosis and Treatment. Atlanta, GA. March 21, 2001.

Morehouse Medical School Neuroscience Institute. Molecular Pathogenesis of Alzheimer's disease. Atlanta, GA. April 18, 2001.

Rotary Club, Norcross. The CART Fund and Early Detection of Alzheimer's Disease. Norcross, GA. November 26, 2001.



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Alzheimer's Association, Greater Georgia Chapter. Docs and Desserts – Alzheimer's disease. Atlanta, GA. November 27, 2001.

Frontiers in Neuroscience. Genetic Clues to the Pathogenesis of Neurodegenerative Diseases. Emory University, Atlanta, GA. March 8, 2002.

Greater Georgia Chapter of the Alzheimer Association. Advances in Alzheimer's disease research. Calhoun, GA. May 2, 2002.

XXIVth International Research Symposium, Acetylcholine and the Cerebral Cortex. Centre de recherche en sciences neurologiques, University of Montreal, Montreal, Quebec. May 6 and 7, 2002.

Senior Connections Star Luncheon Keynote Speaker. Senior Moments – or Early Stages of Alzheimer's Disease. Decatur, GA. June 6, 2002.

National Psychiatry Residents Conference, Advances in the Diagnosis, Biology, and Treatment of the Major Psychiatric Disorders. Palm Beach, Florida. August 22-25, 2002.

Greater Georgia Chapter of the Alzheimer Association. Alzheimer's Update: Medical Interventions and Caregiver Support. Atlanta, GA. November 12, 2002.

University of Michigan, Department of Neurology. Genetic Clues to the Pathogenesis of Neurodegenerative Diseases. Ann Arbor, MI. November 13, 2002.

Foundation of Wesley Woods, Torchbearer's Society Keynote Speaker. Senior Moments – or Early Stages of Alzheimer's Disease. Atlanta, GA. November 15, 2002.

American College of Neuropsychopharmacology. Symposium: Muscarinic Receptors and Neuropsychiatric Disease. Muscarinic Receptor Subtype Expression and Function in Brain. San Juan, Puerto Rico. December 11, 2002.

Laureate Medical Group. New Approaches to Alzheimer's Disease Diagnosis and Treatment. Atlanta, GA. June 17, 2003.

Emory Center for Outcomes Research. The Genetics of Complex Neurological Diseases: Lessons from Alzheimer and Parkinson's Disease. Emory University, June 20, 2003.

Emory Mini-Medical School. Alzheimer's Disease: Hope on the Horizon. Emory University, October 27, 2003.

University of Alabama, Alzheimer's Disease Center. Complex Genetics of Neurodegenerative Disease: From Hot'lanta to Iceland. December 2, 2003.

Southeastern Clinical Society Meeting. Complex Genetics of Neurodegenerative Disease. Atlanta, GA. February 6, 2004.

Alzheimer's Association Professional and Caregiver's Conference. Augusta, GA. March 13, 2004. Keynote Speaker: Alzheimer Disease Research Update: Unraveling the Mystery.

University of Texas Medical Branch, Department of Psychiatry Grand Rounds. May 25, 2004. Progress in Alzheimer's Disease.

Visiting Professor, University of Rome. Three public lectures on 1) Muscarinic Acetylcholine Receptors; 2) Genetics of Neurodegenerative Disease; and 3) Alzheimer's Disease. Rome, Italy. June - July, 2004.

Levey, Allan I.

National Psychiatry Residents Conference, Advances in the Diagnosis, Biology, and Treatment of the Major Psychiatric Disorders. Senior Moments and Mild Cognitive Impairment. Palm Beach, Florida. August 5-8, 2004.

International Basal Ganglia Society 8th Triennial Meeting. Muscarinic Acetylcholine Receptors in the Basal Ganglia. Crieff, Scotland, UK. September 5-9 2004.

Emory University Board of Advisors. The Emory-deCODE Connection: Hot 'lanta and Iceland. September 2004.

Alzheimer's Association Professional and Caregiver's Conference. Atlanta, GA. Alzheimer Disease Research Update. Dec 2, 2004.

Great Lecture Series, Emory University. February 3, 2005.

National Institutes of Health Graduate Partnerships Symposium, Keynote Speaker: Complex Genetics of Neurodegenerative Disease. April 22, 2005.

Cleveland Clinic, Department of Neuroscience. A Novel ApoE Receptor and its Role in Alzheimer's Disease. February 15, 2006.

Virginia Lee Franklin Conference, Nell Hodgson School of Nursing. Decatur, Georgia. New Directions in Alzheimer's Disease Research. February 24, 2006.

Georgia Neurological Association. Atlanta, Georgia. The Complex Genetics of Neurological Disease. February 26, 2006.

Albert Einstein College of Medicine. Bronx, New York. deCODING the Genetics of Neurodegenerative Disease. March 2, 2006.

Presbyterian Village and the Georgia Chapter of the Alzheimer Association. Austell, Georgia. Advances in Alzheimer's Disease Research. March 21, 2006.

New York Presbyterian Hospital-Cornell Medical Center, Department of Neurology Grand Rounds. Sorting Out Alzheimer's Disease Pathogenesis. New York, New York. April 26, 2006.

## **25. Other Activities**

### **Grant Reviews**

VA Merit Awards, 1992-93, Ad Hoc Reviewer  
International Science Foundation, 1993, Ad Hoc Reviewer  
The Ontario Mental Health Foundation, 1993, Ad Hoc Reviewer  
National Science Foundation, 1996, Ad Hoc Reviewer  
Alzheimer's Association, 1997-present, Scientific Review Board  
Medical Research Council, London, UK  
Neurosciences and Mental Health Review Board 2002  
American Federation Aging Research, 2005-present, Scientific Review Board

## **26. Bibliography**

### **a. Published and accepted research articles in refereed journals**

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2. Levey AI and Wainer BH. Cross-species and intraspecies reactivities of monoclonal antibodies against choline acetyltransferase. *Brain Res.* 234: 469-473, 1982.
3. Levey AI, Armstrong DB, Atweh SF, Terry RD, and Wainer BH. Monoclonal antibodies to choline acetyltransferase: production, specificity, and immunohistochemistry. *J. Neurosci.* 3: 1-9, 1983.
4. Levey AI, Rye DB, and Wainer BH. Immunochemical studies of bovine and human choline-o-acetyltransferase using monoclonal antibodies. *J. Neurochem.* 39: 1652-1659, 1982.
5. Levey AI, Wainer BH, Mufson EJ and Mesulam M-M. Co-localization of acetylcholinesterase and choline acetyltransferase in the rat cerebrum. *Neurosci.* 9: 9-22, 1983.
6. Mesulam M-M, Mufson EJ, Levey AI and Wainer BH. Cholinergic innervation of cortex by the basal forebrain: cytochemistry and cortical connections of the septal area, diagonal band nuclei, nucleus basalis (substantia innominata) and hypothalamus in rhesus monkey. *J. Comp. Neurol.* 214:170-197,1983.
7. Armstrong D, Saper CB, Levey AI, Wainer BH and Terry RD. Distribution of cholinergic neurons in rat brains: demonstrated by immunocytochemical localization of choline acetyltransferase. *J. Comp. Neurol.* 216: 53-68, 1983.
8. Mesulam M-M, Mufson EJ, Wainer BH and Levey AI. Central cholinergic pathways in the rat: an overview based on an alternative nomenclature (Ch1-Ch6). *Neurosci.* 10: 1185-1201, 1983.
9. Mesulam M-M, Mufson EJ, Levey AI and Wainer BH. Atlas of cholinergic neurons in the forebrain and upper brainstem of the macaque based on monoclonal choline acetyltransferase immunohistochemistry and acetylcholinesterase histochemistry. *Neurosci.* 12: 669-686, 1984.
10. Mufson EJ, Desan PH, Mesulam M-M, Wainer BH and Levey AI. Choline acetyltransferase-like immunoreactivity in the forebrain of the red-eared pond turtle (*Pseudemys scripta elegans*). *Brain Res.* 323: 103-108, 1984.
11. Levey AI, Wainer BH, Rye DB, Mufson EJ and Mesulam M-M. Choline acetyltransferase-immunoreactive neurons intrinsic to rodent cortex and distinction from acetylcholinesterase-positive neurons. *Neurosci.* 13: 341-353, 1984.
12. Wainer BH, Levey AI, Rye DB, Mesulam M-M, and Mufson EJ. Cholinergic and non-cholinergic septohippocampal pathways. *Neurosci. Lett.* 54: 45-52, 1985.
13. Levey AI, Bolam JP, Rye DB, Hallanger AE, DeMuth RM, Mesulam M-M and Wainer BH. A light and electron microscopic procedure for sequential double antigen localization using diaminobenzidine and benzidine dihydrochloride. *J. Histochem. Cytochem.* 34: 1449-1457, 1986.
14. Bolam JP, Ingham CA, Izzo PN, Levey AI, Rye DB, Smith AD and Wainer BH. Substance P-containing terminals in synaptic contact with cholinergic neurons in the neostriatum and basal forebrain: a double immunocytochemical study in the rat. *Brain Res.* 397: 279-289, 1986.
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17. Hallanger AE, Levey AI, Lee HJ, Rye DB, and Wainer BH. The origins of cholinergic and other subcortical afferents to the thalamus in the rat. *J. Comp. Neurol.* 262: 105-124, 1987.
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